Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A photochemical hole burning medium, comprising a material in which a rare earth complex and a reducing agent are dispersed in a solid matrix; wherein

the photochemical hole burning medium is used at low temperatures; and

said rare earth complex is at least one complex selected from the group consisting of a europium (III) crown ether complex, a europium (III) polyether complex, and a europium (III) cryptand complex.

2. (Canceled)

3. (Previously Presented) The photochemical hole burning medium set forth in claim 1, wherein said rare earth complex and said reducing agent constitute an electron-donating composite compound.

4. (Original) The photochemical hole burning medium set forth in claim 3, wherein said electron-donating composite compound is a silane compound or a disilazane compound.

5. (Previously Presented) The photochemical hole burning medium set forth in claim 4, wherein said silane compound or the disilazane compound is a hexaalkyl disilazane represented by hexamethyl disilane or a hexamethyldisilazane.

6. (Original) The photochemical hole burning medium set forth in claim 3, wherein said electron-donating composite compound is an organic tin compound.

7. (Canceled)

8. (Canceled)

9. (Currently Amended) ~~The photochemical hole burning medium set forth in claim 6~~A photochemical hole burning medium, comprising a material in which a rare earth complex and a reducing agent are dispersed in a solid matrix; wherein

the photochemical hole burning medium is used at low temperatures; and

said rare earth complex is at least one complex selected from the group consisting of a europium (III) crown ether complex, a europium (III) polyether complex, and a europium (III) cryptand complex,

wherein said electron-donating composite compound is an organic tin compound ~~wherein said organic tin compound is a compound~~ represented by RSnSnR in which R is an alkyl group or an aryl group.

10. (Canceled)

11. (Canceled)

12. (Previously Presented) The photochemical hole burning medium set forth in claim 1, wherein said solid matrix is at least one glass-forming compound selected from the group consisting of silica, germanium oxide, boron oxide, phosphorous pentaoxide and tellurium oxide.

13. (Original) The photochemical hole burning medium set forth in claim 3, wherein said solid matrix is at least one glass-forming compound selected from the group consisting of silica, germanium oxide, boron oxide, phosphorus pentaoxide and tellurium oxide.

14. (Original) The photochemical hole burning medium set forth in claim 4, wherein said solid matrix is at least one glass-forming compound selected from the group consisting of silica, germanium oxide, boron oxide, phosphorus pentaoxide and tellurium oxide.

15. (Original) The photochemical hole burning medium set forth in claim 5, wherein said solid matrix is at least one glass-forming compound selected from the group consisting of silica, germanium oxide, boron oxide, phosphorus pentaoxide and tellurium oxide.

16. (Original) The photochemical hole burning medium set forth in claim 6, wherein said solid matrix is at least one glass-forming compound selected from the group consisting of silica, germanium oxide, boron oxide, phosphorus pentaoxide and tellurium oxide.

17. (Canceled)

18. (Canceled)

19. (Original) The photochemical hole burning medium set forth in claim 9, wherein said solid matrix is at least one glass-forming compound selected from the group consisting of silica, germanium oxide, boron oxide, phosphorus pentaoxide and tellurium oxide.

20. (Canceled)

21. (Canceled)

22. (Original) The photochemical hole burning medium set forth in claim 12, wherein at least one compound selected from the group consisting of Al_2O_3, Ga_2O_3, In_2O_3, TiO_2, ZrO_2, Nb_2O_5 and Ta_2O_5 is contained in said solid matrix.

23. (Original) The photochemical hole burning medium set forth in claim 13, wherein at least one compound selected from the group consisting of Al_2O_3, Ga_2O_3, In_2O_3, TiO_2, ZrO_2, Nb_2O_5 and Ta_2O_5 is contained in said solid matrix.

24. (Original) The photochemical hole burning medium set forth in claim 14, wherein at least one compound selected from the group consisting of Al_2O_3, Ga_2O_3, In_2O_3, TiO_2, ZrO_2, Nb_2O_5 and Ta_2O_5 is contained in said solid matrix.

25. (Original) The photochemical hole burning medium set forth in claim 15, wherein at least one compound selected from the group consisting of Al_2O_3, Ga_2O_3, In_2O_3, TiO_2, ZrO_2, Nb_2O_5 and Ta_2O_5 is contained in said solid matrix.

26. (Original) The photochemical hole burning medium set forth in claim 16, wherein at least one compound selected from the group consisting of Al_2O_3, Ga_2O_3, In_2O_3, TiO_2, ZrO_2, Nb_2O_5 and Ta_2O_5 is contained in said solid matrix.

27. (Canceled)

28. (Canceled)

29. (Original) The photochemical hole burning medium set forth in claim 19, wherein at least one compound selected from the group consisting of Al_2O_3, Ga_2O_3, In_2O_3, TiO_2, ZrO_2, Nb_2O_5 and Ta_2O_5 is contained in said solid matrix.

30. (Canceled)

31. (Canceled)

32. (Original) The photochemical hole burning medium set forth in claim 1, wherein the reducing agent has an oxidation/reduction potential of not more than 1 V.

33. (Canceled)

34. (Original) The photochemical hole burning medium set forth in claim 3, wherein the reducing agent has an oxidation/reduction potential of not more than 1 V.

35. (Original) The photochemical hole burning medium set forth in claim 4, wherein the reducing agent has an oxidation/reduction potential of not more than 1 V.

36. (Original) The photochemical hole burning medium set forth in claim 5, wherein the reducing agent has an oxidation/reduction potential of not more than 1 V.

37. (Original) The photochemical hole burning medium set forth in claim 6, wherein the reducing agent has an oxidation/reduction potential of not more than 1 V.

38. (Canceled)

39. (Canceled)

40. (Original) The photochemical hole burning medium set forth in claim 9, wherein the reducing agent has an oxidation/reduction potential of not more than 1 V.

41. (Canceled)

42. (Canceled)